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ABSTRACT OF THE DISCLOSURE

[0043] A dual contact ring for contacting a patterned surface of a wafer and electrochemical plating of a metal on the patterned central region of the wafer and removing the metal from the outer, edge region of the wafer. The dual contact ring has an outer voltage ring in contact with the outer, edge region of the wafer and an inner voltage ring in contact with the inner, central region of the wafer. The outer voltage ring is connected to a positive voltage source and the inner voltage ring is connected to a negative voltage source. The inner voltage ring applies a negative voltage to the wafer to facilitate the plating of metal onto the patterned region of the wafer. A positive voltage is applied to the wafer through the outer voltage ring to remove the plated metal from the outer, edge region of the substrate.